COMMUNIST COUNTRIES IN THE OIL MARKET

We project a decline in Soviet oil production during 1981-85 to a level that should meet Soviet requirements but not leave a surplus for exports. Since Eastern Europe, Cuba, Vietnam, North Korea, and Mongolia are deficit areas, we expect that the Soviet change will shift the Communist countries as a group from a net oil export position to a net import role. How much they will import by 1985 is extremely uncertain. Our projections are affected not only by uncertainties in projections of both production and consumption but also by the fact that oil imports of even relatively small magnitude by world standards would involve a heavy drain on the limited foreign exchange earnings of the Communist countries. Considering the likely oil demand and supply conditions the Communist countries will face and plausible policy choices on their part, we believe that balance-ofpayments constraints would limit net oil imports by the Communist countries to about 2.5 million b/d by 1985 assuming that real oil prices remain constant. Moreover, even if the Communist countries somehow avoid any net oil imports, the effect on world oil supply is only to postpone the projected arrival of demand pressures by one year.

Although the USSR has maintained its position as the world's largest oil producer -- 10.9 million b/d in 1977 -- the rate of growth of oil output has begun to slow markedly. In 1977, Soviet oil production increased only about 500,000 b/d. This was the smallest absolute rise since 1972 and the lowest rate of growth in the entire postwar period. Output is now declining in all of the major Soviet oil-producing regions except West Siberia, and production gains there promise to be much more difficult now that the giant Samotlor Field is reaching its peak.

The Samotlor Oilfield alone has accounted for the bulk of the growth in Soviet oil production over the past five to six years. Development of other, small, West Siberian fields is lagging behind plan. During 1976-80 at least six to eight new fields per year were to begin commercial production to compensate for the leveling

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off of Samotlor's output. However, in 1976 and 1977 only about five fields per year were added, mainly because of failure to meet schedules for massive drilling and infrastructural tasks.

More important, output in the Samotlor Field is likely to begin to decline by about 1980 and to fall substantially during 1982-85, while the decline already under way in other major producing regions will accelerate as reserves are depleted. As a result we believe that overall Soviet oil output could peak by 1980 and almost certainly will begin to decline rather sharply in the early 1980s. For this estimate, we project oil output of 10 million b/d in 1985, but we believe that this is the upper end of the range of reasonable possibilities assuming that exploration is relatively successful, development drilling goes well, and the Soviets can import needed equipment and technology. If things go poorly for them, output could fall as low as 8 million b/d.

Maximum production of alternative fuels -- natural gas and coal -- will only partially compensate for the decline in oil output in the short run. The Soviet natural gas industry has ended a boom phase in its development and is entering an era of slower growth. Soviet coal production already is lagging far below targets.

Although gas reserves are large and yearly output goals were overfulfilled in 1976 and 1977, a future slowdown is likely.

Significant growth potential now is more concentrated in a single region than at any time since the Soviet gas industry began its rapid growth in the mid-1960s. At present, the most promising area is nothern Tyumen Oblast in West Siberia. cost and physical difficulty of developing deposits in very inhospitable terrain and piping the gas thousands of kilometers for domestic use or for export pose unprecedented problems. Poor infrastructure and harsh Arctic conditions will hinder drilling, production, and pipeline construction and will prevent

the Soviets from tapping the huge reserves as quickly as they would like.

Combined production from the country's other major gasfields in the Ukraine, North Caucasus, and Uzbekistan peaked in 1976, declined for the first time in 1977, and is scheduled to drop even further in the next few years.

The USSR has vast reserves of coal, but as with oil and gas, many of the deposits in European Russia are nearing exhaustion and are becoming more costly and difficult to work. Most new deposits are far to the east of industrial centers in the European part of the country, and many of the more accessible ones in the eastern regions are of poor quality. Coal output has increased only about 2 percent per year for the past two decades, and the planned average annual increases of about 3 percent for 1976-80 are not being achieved. Shortages of railcars for coal transport, poor use of the labor force, and lagging additions to new mining capacity are major bottlenecks. As new mines are opened in Siberia, transportation will become an increasingly difficult problem.

Reducing the growth of energy consumption in the USSR without a severe impact on the economy will be extremely difficult. The pattern of energy consumption is substantially different from than in Western industrial countries and is one that makes large energy savings more difficult. The highly energy-intensive iron and steel industry alone accounts for nearly 13 percent of Soviet energy consumption, compared with only about 3 percent in the United States. In Western countries transportation and residential energy use is large, and the potential for energy savings in these uses is great. In the USSR many of the techniques now being discussed in the West to save energy in industry and households are already employed on a wide scale. Most urban space heating in the USSR, as well as large amounts of industrial process heat, are provided through cogeneration. In the West only a relative handful of cogeneration plants exist (mostly in Sweden and West Germany) while the USSR has more than a thousand. overwhelming bulk of intercity freight traffic in the

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Because of the consumption structure, major energy savings will have to be obtained largely by upgrading industrial technology or by a major shift in output away from heavy industry toward light industry and services. Neither would be easy. Upgrading technology is a very time-consuming, capital-intensive process. A shift away from heavy industry such as iron and steel would be contrary to the view of the dominant Soviet interest groups.

Real GNP growth has been dropping in the USSR and is expected to drop further during the 1980s. We project real GNP increases of about 4 percent a year in 1976-80 and 3 to 3.5 percent a year in 1981-85. Soviet energy consumption typically has grown slightly faster than GNP in most recent years as well as in the 1960s. Given the limited potential for energy conservation, total energy demand probably will grow at essentially the same rates as GNP during 1981-85.

The impending decline in oil production, coupled with the growth of GNP, will leave the USSR unable to produce enough energy during 1981-85 to meet domestic needs and at the same time to maintain a substantial net export position. We expect the growth rate for energy production to be about half that for demand. The USSR will, therefore, have to greatly reduce its

The USSR faces serious economic strains in the decade ahead. Apart from the energy problem, the slowdown in growth is expected because of a sharp reduction in the growth of the labor force, declining rates of capital productivity, an inefficient and underpendable agriculture, and a limited capacity to earn hard currency to pay for needed technology imports and intermittent massive grain purchases. A detailed discussion of Soviet economic problems was contained in Soviet Economic Problems and Prospects, ER 77-10436, July 1977.

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net exports of energy. In 1976 they were 3.3 million b/d in oil equivalent. By 1985, sustaining even 1 million b/d will be difficult. We expect most net energy exports by 1985 to be in the form of natural gas. At that time, Soviet oil production and consumption may be roughly in balance. Continued Soviet oil exports to the other Communist countries would, therefore, have to be covered by imports from the West.

Because of the paucity of domestic energy resources, about 80 percent of the oil consumption of East Europe is covered by imports. Out of total oil consumption of 2 million b/d in 1976, some 1.6 million b/d was supplied by imports, 85 percent of which came from the USSR.

Nearly all of Eastern Europe's oil production occurs in Romania, which is almost self-sufficient, and in Yugoslavia, which now produces about 30 percent of its needs and buys the remainder for hard currency. Bulgaria, Czechoslovakia, Hungary, Poland, and East Germany are almost entirely dependent upon imports, which they now obtain almost exclusively from the USSR for soft currency.

Economic growth in Eastern Europe is slowing -only 3.5 percent in 1976 and 1977, compared with a 4.5
percent average during 1971-75 -- and we expect a continued
slow growth -- about 3.5 to 4 percent annually -- during
1978-85. The growth in energy demand is also slowing.
In spite of rising gas imports, renewed emphasis on
coal production, and the beginning of an ambitious nuclear
power program, much of the growth in energy demand will
still have to be met by increased imports of oil. We
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Europe will need increasing quantities of imported oil.

Romania and Yugoslavia probably can afford to continue paying for most of their oil imports in hard currencies. Romania should require net imports of only about 100,000 b/d in 1985. Yugoslavia now has net imports of about 180,000 b/d, of which about one-half comes currently from the USSR, partly for hard currency. By 1985 Yugoslavia will require imports of about 250,000 b/d, with all or nearly all being obtained in hard currency markets.

The expected drop in Soviet oil production will cause serious problems for the rest of Eastern Europe. We expect that these countries will be forced to share the burden of the Soviet oil shortfall. At best there

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will be no increase in Soviet oil exports to Eastern Europe after 1980. At worst, these exports could cease. If by 1985 Bulgaria, Czechoslovakia, East Germany, and Hungary were forced to obtain all of their oil supplies in the West, it would cost them about \$13 billion at 1977 prices. This sum is nearly equal to their total hard currency earnings last year. Clearly there is no way they could afford such large expenditures for oil. In these circumstances, the Soviets probably will continue substantial, but probably lower, exports to Eastern Europe and consequently import some OPEC oil for hard currency on their own behalf.

The other Communist countries, except China, currently obtain most of their oil imports from the USSR. They have few energy alternatives, and their oil imports are likely to rise. Cuba accounts for the bulk of the 230,000 b/d Soviet exports to this group in 1977, and Moscow has put a very high priority on meeting Havana's energy needs in the future. Cuba consumed 180,000 b/d in 1976 and will probably use 250,000 b/d or more by 1985. In 1976 its oil imports would have cost about \$900 million, or more than total Cuban hard currency earnings. As for North Korea, Vietnam, and Mongolia, their combined imports are only about 50,000 b/d at present and are likely to rise only moderately. For them, China is a possible alternative source.

China is unlikely to become a major supplier of crude oil to the world market in the next decade. Output of 1.8 million b/d in 1977 places China among the important world producers -- comparable to Indonesia and Abu Dhabi. But, domestic demand is rising rapidly, and China already consumes some 90 percent of its own production.

The growth of crude production declined from 20 percent or more a year in the early 1970s to only 8 percent in 1977. The slowdown apparently has been caused by a combination of political disorders and accelerating technical difficulties in stepping up output at larger fields. The major producing fields are now 10 or more years old, and their shallower reservoirs are nearing exhaustion. There are, however, at least four new fields with shallow reservoirs, which the Chinese can exploit with their present drilling capabilities. In the meantime Peking is importing US technology for deep drilling. It also is beginning to produce oil from the Gulf of Pohai and to drill exploratory holes on the continental shelf using rigs imported from Singapore, Japan, and Norway.

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China probably will have the capability to produce more oil than the domestic economy will absorb into the early 1980s. We believe that the amount of exportable oil will level off at about 500,000 to 600,000 b/d in 1982 or so. Japan probably will take most of the exportable surplus; a recent long-term Sino-Japanese trade agreement provides for the exchange of Chinese coal and oil for Japanese technology. To increase oil exports beyond 1982, China would need considerable luck in locating large and easily exploitable reserves or would have to enforce stringent economies in domestic oil consumption.

Depending on how soon Soviet oil production begins to decline, the rates of economic growth in the several Communist countries, and the growth of their hard currency earnings, Communist net oil imports would be as large as 2.5 million b/d in 1985 (see table 1). This figure consists of projected Chinese exports of about 500,000 b/d, imports by East European states of about 2.5 million b/d, a balanced position for the USSR, and net imports of 300,000 b/d for other Communist countries, primarily Cuba.

The manner in which the USSR might go about allocating oil imports and exports on its own account is, of course, a matter for speculation. Moscow currently earns a net of about \$5 billion in hard currency from oil exports, primarily to West Europe. It could choose to maintain these exports, at least in part, and buy from other OPEC countries to fulfill a part of its own needs. Similarly, the USSR could continue exporting to Eastern Europe while importing compensating quantities from OPEC. Since OPEC countries are unlikely to sell very large quantities for anything other than hard currency the net effect of such arrangements on Soviet hard currency balance of payments would, at a minimum, be similar to cessation of Soviet exports of oil. To the extent that the USSR imports oil for hard currency so that it can continue exports to Eastern Europe or Cuba for soft currency, the hard currency balance of payments would worsen still further.

The Communist countries probably would be able to finance net imports of the projected magnitude if the real price of oil remained near present levels. The total hard currency imports and hard currency receipts of the USSR, Eastern Europe, and Cuba as a group were roughly in balance in 1977; they amounted to about \$33 billion on both sides of the ledger.

These countries' net hard currency oil exports were about \$5 billion in 1977; the projected net oil imports for hard currency of about 2.5 million b/d in 1985² would cost at least \$12 billion at 1977 prices. The resulting shift on the oil account of some \$17 billion consequently is about one-half of current hard currency receipts. It is reasonable to expect that foreign currency receipts from nonoil exports, gold, and net credits will increase by at least \$10 billion through 1985. Consequently, although some cuts in nonoil imports would be necessary, it seems likely that all high-priority imports could be accommodated.

This projection assumes Soviet oil production in 1985 is 10 million b/d, the upper end of the range we consider likely. If production were at the lower end of our projection -- that is, 8 million b/d -- we doubt that the shortfall could be made up through additional oil imports for hard currency. Imports of the necessary magnitude would place an intolerable burden on the combined balance of payments of the Soviet Union and Eastern Europe. We consequently believe that any added shortfall in Soviet oil supply will be absorbed by the Soviet and East European economies through slower economic growth rather than be reflected on the world Although the future volume of Communist oil market. 3 oil imports is extremely uncertain, we have no doubt that the USSR and Eastern Europe face very difficult energy problems and painful policy choices.

Excluding projected oil imports through barter deals of about 500,000 b/d and projected Chinese exports.

The figure of 3.5 million to 4.5 million b/d used in our April 1977 report was based on slightly faster Soviet economic growth projections and made no allowance for conservation or balance-of-payments constraints.

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